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8 August 1973

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National Aeronautics and Space Administration  
Goddard Space Flight Center  
Greenbelt, Maryland, 20771

Attention: Mr. Edward W. Crump, Code 430

Subject: Monthly Progress Report for Period Ending 1 August 1973

Contract: ERTS Image Data Compression Technique Evaluation MMC #153

Principal Investigator: Dr. Donald J. Spencer, GSFC ID PR 512

During the month of July, the remaining object classes and full scenes were processed. During August the rough draft of the final report will be assembled and delivered to NASA GSFC on September 6, 1973. The outline of the final report is attached to this report.

All objectives of the study have been achieved and an average strictly information preserving compression of at least 2:1 was obtained. Of major importance to the problem of data archiving, results indicate that most 100 mi x 100 mi scenes can be stored on a single computer tape in the compressed data format. This saving of three tapes per scene can yield economic benefits, permit a reduction of the space allocated for tape storage, and simplify tape retrieval procedures.

*Curtis L. May*  
Curtis L. May

(E73-10853) ERTS IMAGE DATA COMPRESSION  
TECHNIQUE EVALUATION Monthly Progress  
Report, period ending 1 Aug. 1973 (TRW  
Systems Group) 2 p HC \$3.00 CSCL C5B

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## ERTS-A FINAL REPORT FORMAT

1. Introduction
  - a. Description of overall work performed and results obtained
2. Technical Description of Work Performed
  - a. Data Flow through computer programs
  - b. Compression algorithms
  - c. Data statistical measurements and significance
  - d. Output tapes and imagery processing
3. Results Obtained
  - a. Description of scenes and object classes processed
  - b. Data characteristics and statistics
  - c. Compression statistics
  - d. Imagery obtained
  - e. Induced distortion and noise
4. Conclusions Based on Study
  - a. Impact of data compression on ERTS program
  - b. Spacecraft hardware considerations for data compression
  - c. Tradeoffs of the several compression techniques used
5. Recommendations for Future Work

### APPENDICES:

- A. Deliverable Computer Programs (listing and flow)
- B. Reproduced Imagery
- C. Sample Computer Output Products